October 9, 2024 / News Releases

History of COVID-19 Doubles Long-term Risk of Heart Attack, Stroke and Death

Research analysis reveals risk of cardiac events also varied by blood type and stays elevated for years after diagnosis

Media Contact

Alicia Reale-Cooney | 216.408.7444

Shannon Kelley | 216.318.8067

Media Downloads

Images: 1 Video: 1 Audio: 0 Text: 0

Content is property of Cleveland Clinic and for news media use only.

Show Media Downloads

A history of COVID-19 can double the risk of heart attack, stroke or death according to new research led by Cleveland Clinic and the University of Southern California.

The study found that people with any type of COVID-19 infection were twice as likely to have a major cardiac event, such as heart attack, stroke or even death, for up to three years after diagnosis. The risk was significantly higher for patients hospitalized for COVID-19 and more of a determinant than a previous history of heart disease.

Stanley Hazen, M.D., Ph.D.

Further genetic analysis also revealed individuals with a blood type other an O (such as A, B or AB) were twice as likely to experience an adverse

cardiovascular event after COVID-19 than those with an O-blood type.

Published in Arteriosclerosis, Thrombosis, and Vascular Biology, the researchers used UK Biobank data from 10,005 people who had COVID-19 and 217,730 people who did not get infected between February to December 2020.

“Worldwide over a billion people have already experienced COVID-19. The findings reported are not a small effect in a small subgroup,” said co-senior study author Stanley Hazen, M.D., Ph.D., chair of Cardiovascular and Metabolic Sciences in Cleveland Clinic’s Lerner Research Institute and co-section head of Preventive Cardiology. “The results included nearly a quarter million people and point to a finding of global healthcare importance that promises to translate into a rise in cardiovascular disease globally.”

Certain genetic variants are already linked to coronary artery disease, heart attack and COVID-19 infection. The researchers completed a genetic analysis to see if any of these known genetic variants contribute to elevated coronary artery disease risk after COVID-19. None of the known genetic variants were drivers of the enhanced cardiovascular events observed post COVID-19. Instead, the data highlighted an association between elevated risk and blood type.

Previous research has shown that people who have A, B or AB blood types were also more susceptible to contracting COVID-19.

“These findings reveal while it’s an upper respiratory tract infection, COVID-19 has a variety of health implications and underscores that we should consider history of prior COVID-19 infection when formulating

cardiovascular disease preventive plans and goals," said Dr. Hazen.

"The association uncovered by our research indicates a potential interaction between the virus and the piece of our genetic code that determines blood type and signals the need for further investigation," said Dr. Hazen. "A better understanding of what COVID-19 does at the molecular level may potentially teach us about pathways linked to cardiovascular disease risk."

Hooman Allayee, PhD, of USC's Keck School of Medicine, was co-senior author of the paper.

"Our data suggesting that risk of heart attacks and strokes was especially higher among COVID-19 patients with A, B, or AB blood types has significant clinical implications," Dr. Allayee said.

"Given our collective observations and that 60% of the world's population have these non-O blood types, our study raises important questions about whether more aggressive cardiovascular risk reduction efforts should be considered, possibly by taking into consideration an individual's genetic makeup."

The findings show that the long-term risk associated with COVID-19 "continues to pose a significant public health burden" and that further investigation is needed, according to the authors.

This work was supported by the National Institutes of Health [R01HL148110, R01HL168493, U54HL170326, P30ES007048, R01DK132735, P01HL147823 and R01HL147883].

Disclosures: Dr. Hazen is named as co-inventor on pending and issued

patents held by Cleveland Clinic in relation to cardiovascular diagnostics and therapeutics.

About Cleveland Clinic

Cleveland Clinic is a nonprofit multispecialty academic medical center that integrates clinical and hospital care with research and education. Located in Cleveland, Ohio, it was founded in 1921 by four renowned physicians with a vision of providing outstanding patient care based upon the principles of cooperation, compassion and innovation. Cleveland Clinic has pioneered many medical breakthroughs, including coronary artery bypass surgery and the first face transplant in the United States. Cleveland Clinic is consistently recognized in the U.S. and throughout the world for its expertise and care. Among Cleveland Clinic's 81,000 employees worldwide are more than 5,743 salaried physicians and researchers, and 20,160 registered nurses and advanced practice providers, representing 140 medical specialties and subspecialties. Cleveland Clinic is a 6,690-bed health system that includes a 173-acre main campus near downtown Cleveland, 23 hospitals, 276 outpatient facilities, including locations in northeast Ohio; Florida; Las Vegas, Nevada; Toronto, Canada; Abu Dhabi, UAE; and London, England. In 2023, there were 13.7 million outpatient encounters, 323,000 hospital admissions and observations, and 301,000 surgeries and procedures throughout Cleveland Clinic's health system. Patients came for treatment from every state and 132 countries. Visit us at clevelandclinic.org. Follow us at twitter.com/CleClinicNews. News and resources available

at newsroom.clevelandclinic.org.

Editor's Note: Cleveland Clinic News Service is available to provide broadcast-quality interviews and B-roll upon request.

Latest from the Newsroom

Cleveland Clinic Children's Ranks Among the Nation's Best Children's Hospitals by U.S. News & World Report

Cleveland Clinic Researchers Discover New Bacterium that Causes Gut Immunodeficiency

Alice L. Walton Foundation, Mercy, Heartland Whole Health Institute, and Cleveland Clinic Collaborate to Bring World-Class Health Care to the Heartland

Cleveland Clinic Study Shows Bariatric Surgery Outperforms GLP-1 Diabetes Drugs for Kidney Protection

Cleveland Clinic Study Is First to Show Success in Treating Rare Blood Disorder

Newsweek Ranks Cleveland Clinic No. 1 Smart Hospital in the World and One of World's Top Hospitals for Specialized Care

Cleveland Clinic Study Identifies Key Factors That Can Impact Long-Term Weight Loss in Patients with Obesity Who Were Prescribed GLP-1 RA Medications

Cleveland Clinic Children's Expands Primary Care and Specialty Services in Akron

Cleveland Clinic

Home
About Cleveland Clinic
Careers at Cleveland Clinic
Giving
Office of Diversity & Inclusion
Community Outreach
Research & Innovations
Health Library
Free Health eNewsletters
Resources for Medical Professionals
Media Relations

Site Information & Policies

Send Us Feedback
About this Website
Advertising Policy
Social Media Policy
Copyright, Reprints & Licensing
Website Terms of Use
Website Privacy Policy
Notice of Privacy Practices
Non-Discrimination Notice

Resources

Buildings

Facts & Figures

Press Contacts

Studio & Live Shot Locations

9500 Euclid Avenue, Cleveland, Ohio 44195 | 800.223.2273 | © 2024 Cleveland Clinic. All Rights Reserved.